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AUTHOR Greene, Terry; Davies, Florence
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ABSTRACT

Four inquiries were conducted to provide some initial feedback on the operation of the Directed Activities Related to Text Project. Three were concerned with aspects of process and examined such problems as the ways in which the actual course of a text-based lesson reflects the objectives of the project, and how such a lesson can be shown to differ from its nearest parallels--discussion on the same subjects with similar groups of students, monitored under standard conditions but not otherwise influenced by the ideas of the project. The fourth inquiry took the form of a standard methods experiment in which the outcomes of an 18-month program were measured by comparing posttest results on reading with pretest data. Results indicated that the Directed Activities Related to Text Project operated successfully in the manner intended--students were more active in discussion, the teacher was free to deal with individual problems, and there was an increase in student initiative. Following a period of regular lessons based on these principles, most students showed a marked improvement in reading comprehension. (HOD)

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Outcomes of the project : some preliminary data

by
Terry Greene and Florence Davies

I Introduction

We present the results of four enquiries designed to provide some initial feedback on the operation of Directed Activities Related to Text.[1] Three are concerned with aspects of process: in what ways does the actual course of a text-based lesson reflect the objectives of the project? Can such a lesson be shown to differ from its nearest parallels - discussion on the same subjects with similar groups of pupils, monitored under standard conditions, but not otherwise influenced by the ideas of the project? The fourth takes the form of a standard methods experiment, in which the outcomes of a 18-month programme are measured by comparing post-test results on reading with pre-test data obtained before the training. Training took the form of a full programme of text-based lessons carried out by a team of teachers who were familiar with the ideas of the project and committed to their implementation.

It should be added that the design of the last-mentioned study did not feature a control group undergoing a standard programme of instruction. The principal measure used was a comprehension test that gives age-norms for every level of score. This allows one to compare gains made by specially taught groups with gains that might be expected in the course of normal schooling. However, the overall plan of the project provides for an extensive and comprehensive programme of evaluation, including a variety of well-controlled studies. Data from that programme will not be complete until July 1981, and results will therefore not appear before 1982.

The remainder of this article is presented in two sections. The first of these describes the three process enquiries and their results, while the second is an account of the method experiment bearing on outcome.

II Classroom process

Among the principal objectives of the Reading for Learning project is the encouragement of pupil initiative in coming to terms with the content of text. Pupil tasks that derive from text analysis are designed to help the pupils in framing their own questions and looking for answers to problems formulated by themselves. Even when the task is one of text completion, pupils work in groups and are expected to test the validity of their hypotheses by submitting them to the evaluation of their peers, using the text itself as an additional - and in some ways

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1. See: Schools Council Reading for Learning in the Secondary School project, Learning from the Written Word, Units 1-8, published by University of Nottingham, School of Education.

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neutral - informant. It is therefore reasonable to expect that, if these objectives are translated into effective practice, the lessons that ensue should feature more pupil talk relative to teacher talk, more pupil-pupil interaction relative to pupil-teacher interaction, and more pupil initiative in dialogue relative to teacher initiative. These hypotheses are taken up in turn in the course of three brief studies, each of which takes one of the three predictions as its main focus, although it may include a number of results that bear on the others.

Comparative incidence of teacher-talk and pupil-talk

The question and answer method is among the best-established teaching procedures. In principle it allows for a continuous gradation in the relative contributions of teacher and pupils, ranging from what would amount to a lecture with minimal feedback to a class discussion with minimal intervention by the teacher. In practice, the range in British schools is typically much narrower, and interventions by the teacher probably outweigh contributions from students in terms of number of utterances, length of utterance, and so on. So much may be deduced from evidence contained in two recent national surveys, both of which are based on data from the whole spectrum of education in England and Wales, the Bullock Report [1.] and the HMIs Report on Secondary Education [2.].

However, the information contained in the above documents is in general too descriptive to use as a source of control data against which one might compare observations on project-based lessons. It was therefore essential to obtain an independent set of control data, under similar conditions of observation to those used for project lessons, and based on the work of teachers who were firm believers in class discussion. These teachers were therefore similar to the experimental group in terms of general outlook, differing only in support background for the lesson and its methodology: for the experimental group these were appropriate text extracts together with one or more of the Directed Reading Activities, while for the control groups they varied from teacher to teacher and from lesson to lesson.

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1. Chapter 10 in 'A Language for Life', Report of the Bullock Committee, H.M.S.O., 1975

2. Sections 6.41-6.46 in 'Aspects of Secondary Education' Report of Her Majesty's Inspectors, H.M.S.O., 1979.

TABLE 1.

Contributions to class discussion : relative incidence of teacher talk and pupil talk as percentages of total discussion time.
(Figures in brackets denote number of lessons)

Subject	Control group			Project-based lessons		
	% teacher	% pupil		% teacher	% pupil	
Chemistry	71	29	(1)	-		
Physics	76	24	(2)	48	52	(2)
Biology	68	32	(1)	31	69	(2)
General Science	65	35	(2)	25	75	(2)
Geography	73	27	(2)	59	41	(2)
History	80	20	(2)	-		
Integrated Studies	83	17	(2)	32	68	(2)
Social Studies	60	40	(1)	19	81	(2)
English	65	35	(3)	35	65	(2)
Column average	71	29	(16)	36	64	(14)

Table I shows the comparative distribution of teacher talk and pupil talk shown as percentages of total time spent in whole-class discussion. Data in column 2 are based on returns from sixteen teachers selected by their colleagues for their expertise and confidence in handling class discussions. They were asked to record those parts of their lessons which fell under this heading. Subsequent analysis of recordings was then carried out by the first author from transcripts of the original tapes. Data in column 3 were obtained in a similar manner from a total of fourteen text-based lessons conducted by thirteen teachers as part of the Reading for Learning project.

With few exceptions, each of the lessons figuring in Table 1 was conducted by a different teacher. Overall time spent in discussion showed some variation within groups but little difference between groups. For control group lessons mean duration of discussion was 21½ minutes with a range of 17-28 minutes, while the mean for project based lessons was identical, with a range of 14-29 minutes. On the other hand, the separation of the data on ratio of teacher talk to pupil talk is striking. The lowest relative contribution among control group teachers, being the single lesson in Social Studies, is still greater than the highest in the project-based lessons (Geography). For the rest, differences are marked, and all are in the predicted direction. Since the two distributions do not overlap, statistical analysis is irrelevant.

In view of the careful selection of teachers for the control group, it is reasonable to conclude that the commitment and experience of teachers are not enough to promote pupil initiatives in class discussion. Such initiatives can be maximised where the pupils are given an independent source of data, the text, where they are taught and encouraged to use it, and when they are given the opportunity and the incentive to frame their own hypotheses and test them through class discussion related to well-defined yet open-ended goals.

Quality of interaction between pupils

The results of the above enquiry are encouraging, but the observations upon which they bear are confined to those parts of the relevant lessons that were given over to whole discussion with the teacher. What are the effects of text-based lessons on learning behaviour in general? Is there evidence of greater involvement and of an increase in task-relevant interaction between students?

To obtain some initial reassurance on these points, a series of observations was undertaken in eight schools, four of which were collaborating with the project, while the other four were selected as comparable both in student intake and in the quality of tuition. In each of these schools lessons were observed ranging over the three subject areas: English, Science, and Social Studies. Observations were continued over the entire duration of these lessons, which involved eight classes in the project-based schools, all engaged in text-based work, and ten in the control schools studying similar topics but using a variety of media. A total of 213 students were seen in the first group, and 264 in the second. The overall duration of the whole series of observations was 51¾ hours.

All observations were carried out with the aid of a modified version of the Boydell Observation Schedule (Boydell, 1974, 1975).[1] Observations are made at thirty second intervals, focussing on one student at a time for a fixed period (five minutes in the present study) before switching to another student, pre-selected at random from the class as a whole. Boydell's 'Pupil Record' allows the observer to categorise every instance of person interaction involving the pupil under observation, using two different schedules, one for interactions involving the teacher or another adult, and the other for interactions between pupils.

TABLE 2

Interactions between pupils in project and control schools

	Text-based lessons					Control lessons				
	School				Total	School				Total
Total of all interactions	118	115	121	111	465	176	194	120	104	594
Same task	86	78	90	83	337 72	54	74	22	32	182 (31)
different tasks	32	37	31	28	128 28	122	120	98	72	412
approved activity	110	108	115	104	437	139	161	88	70	458
activity not approved	8	7	6	7	28 6.4	37	33	32	34	136 29.7

Table 2 is a summary of the findings based on interactions among pupils. The overall totals of all such interactions are comparable, when allowance is made for the somewhat greater number of observations in the control schools. For text-based lessons interactions generally occur when both parties are engaged on the same task. Such interactions are part of the recommended procedure and further the learning of both participants. They constitue 72% of the total (337 out of 465). Interactions of the same sort are a minority of the total in control schools, forming only 31% (182) in an overall total of 594. On the remaining 69% of occasions (412 in all), the interaction was an intrusion on the work of the respondent, since he was then engaged on a different task from the initiator. It is true that only a minority of these interactions could be interpreted as behaviour unacceptable to the teacher. Sub-categories such

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1. See also Boyer et al, 1973.

as disruptive behaviour, horseplay, etc. amount to only 29.7% of interactions in control lessons, but a trifling 6.4% in project lessons (raw totals of 136 and 28 respectively). Both this difference and the predominance of same task interactions attest to the high degree of task involvement during text based lessons combined with the collaborative effort required within the project.

The first part of the Boydell Pupil Record, concerned with pupil-teacher interactions, provides some additional pointers to the success of the method of teaching as well as giving a clear indication of how it is exploited by the better teacher. The relevant data are summarised in Table 3.

TABLE 3

Interactions between teacher and pupils in project and control schools

	Text-based lessons					Control lessons				
	School					School				
	1	2	3	4	Total	1	2	3	4	Total
Total Interactions	86	97	95	77	355	170	148	117	127	562
Teaching/learning	56	67	64	50	231	102	79	64	56	301
Routine admin.	9	7	13	6	35	33	37	24	41	135
Positive comment	16	21	14	18	69	5	4	9	6	24
Negative comment	5	8	4	3	20	30	28	20	24	102
Addressee individual	52	63	69	45	229	14	8	8	7	37
group	24	20	16	19	79	31	24	25	22	102
class	10	10	9	13	42	118	113	84	96	411
other	-	4	1	-	5	7	3	-	2	12

For the most part, interactions listed in Table 3 represent interventions by the teacher. Even allowing for the differing number of observations, there are more such teacher interventions (562) in control lessons than in project lessons (355). In both cases, the majority are concerned with teaching the material in hand. However, the distribution among other categories shows some highly significant differences between the two learning environments.

The ratio of positive to negative comment is 69:20 in this group, where control classes show a reverse pattern of 24:102. But perhaps the most interesting of all the findings in Table 3 is the distribution of teachers' comments in terms of addressee. Not surprisingly, in the conventional lesson the teacher tends to address the whole class (411 occasions out of 562). What is more remarkable is that in the project lesson, the most frequent addressee is not the class, nor even the group, as might have been anticipated, but the individual. Dare one infer that these teachers feel no need to intervene in group discussion, preferring to let the pupils sort their own difficulties? Instead, they are able to devote time to individual pupils, thereby contributing to their sense of personal worth.

Self-direction and student initiative

In this section we present the result of an attempt to analyse transcripts enabling us to compare the language behaviour found in text-based lessons with recordings made in more typical classroom settings. With this end in view, transcripts were analysed using the system of discoure analysis devised by Sinclair and Coulthard (1975). We will present only two brief examples, one taken from a standard lesson and the other from the project recording, but these should suffice to indicate some important differences that bear directly on pupil initiative.

The method of Sinclair and Coulthard identifies five discourse units. Within the lesson, the main units of discourse are transaction, exchange, move and act. They are listed in declining order of size, with each category subsuming those beneath it. The boundaries of a transaction are easy to determine since such units are always opened by one of a small set of markers consisting of a single word frame ('now', 'right', 'good', 'well', 'O.K.'). This is followed by a statement which gives some guidance about the topic of the new exchange, a focus statement. The final boundary of a transaction may be marked, but is often left implicit. Between the boundaries of a transaction one will typically find a number of exchanges, each made up of an opening move, an answering move, and a follow-up move. Each new opening signals a fresh exchange, although the answer and follow-up are not obligatory. Any of these moves, if it occurs, will be realised either by a single act or by a combination of acts. For instance, in our first example (Table 4) the first exchange begins with an opening move by the teacher made up of five separate acts: a meta-statement, a comment, a question, a clue, and a further question.

Table 4 Discourse Analysis of part of a conventional teacher-led discussion

Exchange Type	Opening	Act.	Answering	Act.	Follow-up	Act.
Boundary	Can we start at the top and go through it FOCUS there are one or two things I would like to point out "Cattle are essential" what does essential mean "for our milk and meat supplies" Can you work out what it means even if you don't know?	ms com elicit clue elicit	Important	rep.	Yes, it means more than important - it means can't do without it at all, it means very, very important -- so reading on "there has been an increasing demand for more milk and meat"	acc eval clue
Elicit	What is a demand Simon	elicit nom	Wanted	rep	Yes, a demand is something which is wanted again very badly - in this case a demand for more milk and more meat	acc
Boundary	Now, FRAME in the next sentence there are two words inside little commas in inverted commas 'dual purpose' FOCUS	m st clue				
Elicit	does anybody understand what dual purpose means Now, FRAME can you read that sentence carefully with your partner and see if you can work out what dual purpose means	elicit m	Is it reason?	rep.	No, we know what a purpose is a reason for doing something	eval com.
Elicit	What do you think dual means, see if you can work it out from other things in that sentence Now then Darren	elicit dir. clue prompt nom	Two things	rep.	Yes	acc.
Elicit	What in the sentence tells you that which part of the sentence tells you that what two things are these cows used for?	elicit elicit elicit	milk and beef milk and meat	rep rep	Pardon Yes Dawn says its rather like the same word as dual carriageway	loop acc com
Elicit	So what does dual mean	m elicit	two	rep.		
Boundary	Now, FRAME half way down the next paragraph then FOCUS I dont want to read it all through, just one or two words I want to pick out for you	m clue ms				

Table 2 Discourse analysis of part of a discussion recorded during a project based lesson

Exchange	Opening	Act	Answering	Act	Follow-up	Act.
T. Direct	Lets just take the first sentence [FOCUS]	St.	Yes	Ack.		
P1/P2 Elicit	What have we decided the substance is	elic.	Pb Dust and gas	rep.		
P2 Elicit	Right now Whats happening to the dust and gas	m elic	Its being attracted by gravity	rep.	P1 Yes its attracting it	Ack eval
P2 Elicit	So, the event is 'attracted' isn't it	m elic	Yes its attracting it	ack acc		
P3 Elicit	and the cause?	elic	is gravity -- gravity	rep		
P1 Direct	Put as the cause of - forces of gravity that's what we've got	d com				
T. Boundary	Now [FRAME] its a bit misleading isn't it	M	"As it became heavier"	elic	P4 It seems to be a continuation of the last sentence	Com
	at the beginning of the next sentence [FOCUS]	elic at.	Yes it seems to be	ack acc		
T.Elicit	But what is the substance we are talking about?	elic	Gravity	rep	(P1,P2) No, it isn't	eval

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Table 2 (continued)

			Particles of dust, dust, dust	rep	P4 It seems as if its talking about the same thing because it says 'As it'	com inf
					P7 But, 'it' is still the earth	inf
			As it became heavier	rep	Is it - the earth	com
					P1 So,	m
					we go back to the dust and gas	com
			Those were 'attracted by gravity' and 'as it became heavier'	com		
T. Boundary	So	m	Yes	ack acc		
	You've got dust	com				
P4 P7 Inform	Forces of gravity increased, squeezing the particles	inf	P1 Whats the event	elic	P8 Forces of gravity increased	rep
					P8 Squeezing the particles	rep
P2 Re-initiate	and there's something else that happens	cl	the temperature rises	rep	P1 So we got two things under event there	m com
P7 Inform	"the forces of gravity increased forcing the particles together and causing the temperature to rise.	inf				

T = Teacher utterance
P 1-7 = Individual students utterances
P8 = Several students making same utterance.

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The method can be readily understood by reference to our first example, Table 4, being an extract from a fairly standard class lesson in which a text is being used, but not in the manner developed by the present project. The transcript, and also the analysis to which it gives rise, are typical of the exchanges that one hears in classrooms everywhere, and quite similar to those discussed by Sinclair and Coulthard. One notes especially that opening moves and follow-up moves are nearly always teacher moves, while the part of the pupil is restricted to relatively brief answering moves. The acts associated with these moves are also unequally apportioned, since it is always the teacher who provides prompts and comments, who elicits replies, and who directs or accepts or evaluates. Is this familiar pattern maintained in text-based lessons?

Table 5 is an analysis of one part of a transcript from a project-based lesson and, again, it is typical of the exchanges found in such lessons. Here a teacher and a group of 10 - 11 year olds are looking at hypotheses on the origin of the solar system and the earth. The extract related to the following piece of text:

> "At first the earth was probably a relatively small mass which grew as more and more dust and gas were attracted to it by gravity. As it became heavier the forces of gravity increased, squeezing the particles of dust tightly together and causing the temperature to rise."
>
> Ewington and Moore (1971)

The minor complications arising from the anaphoric reference 'As it' in sentence two, to three possible points in sentence one were resolved by the pupils. As typically occurs with this particular style of directed reading activity the students' end-product was a two entry table of the content. From the total table the pupils constructed, here is the section relevant to the two sentence extract.

	Substance	Cause of change	Event
1.	Earth - small mass - dust cloud*	-	-
2.	(grows)	by gravity	attracting (more) dust and gas
3.	Compact dust*	(more gas and dust)	became heavier
4.	"	Forces of gravity increased	- particles squeezed together - temperature rose

* taken from earlier part of text

We note that the regular pattern of teacher elicit - pupil reply - teacher follow-up is no longer the basic form of discourse. Instead we have found it necessary to nominate the sources of utterances, whether teacher or pupils. There is a marked increase in the number of student questions that bear directly either on the content of the text or on the process of information retrieval. We note the frequency and repetition of text reference. The pupils are holding a 'conversation' with the text which they are interrogating in an effort to test the hypotheses which they formulate.

Thus, pupils are acting as informants to each other, evaluating, commenting and offering feedback to a degree which does not occur in the analyses of 'traditional' and teacher-pupil classroom interactions. Given that pupils with only a little experience of directed reading activities no longer regard the authority of text as 'sacred' it now becomes a neutral source of information. It can be questioned and criticised and responses to it can be evaluated by fellow pupils in a manner which is not normally possible when all the information comes from the teacher. The teacher too is no longer mainly engaged in eliciting and evaluating responses to questions for which he/she already knows the answers. Nevertheless, he is still in a position to control the broad lines within which learning can take place.

III Improvement in reading

This section presents the results of an inquiry conducted in a single school which has been associated with the work of the project from its inception. It is an 11 - 14 high school catering for pupils of both sexes drawn from a variety of social backgrounds including both urban and rural communities. The pupils were followed over a period of 2½ years, beginnings with their entry to the school.

Specialised teaching in consultation with the project was undertaken by the staff of the Integrated Studies Department (history, geography, religious education and social studies), consisting of seven teachers, together with two members of the English Department. The reading programme covered a full range of directed reading activities as outlined in the last paper. However, both frequency and type of activity were determined in part by the demands of the teaching programme and the characteristics of the individual text, but partly too by the predilections of individual teachers. As a consequence, there were wide variations both in the frequency of DARTs and in their type over the two year period in which the programme was effective.

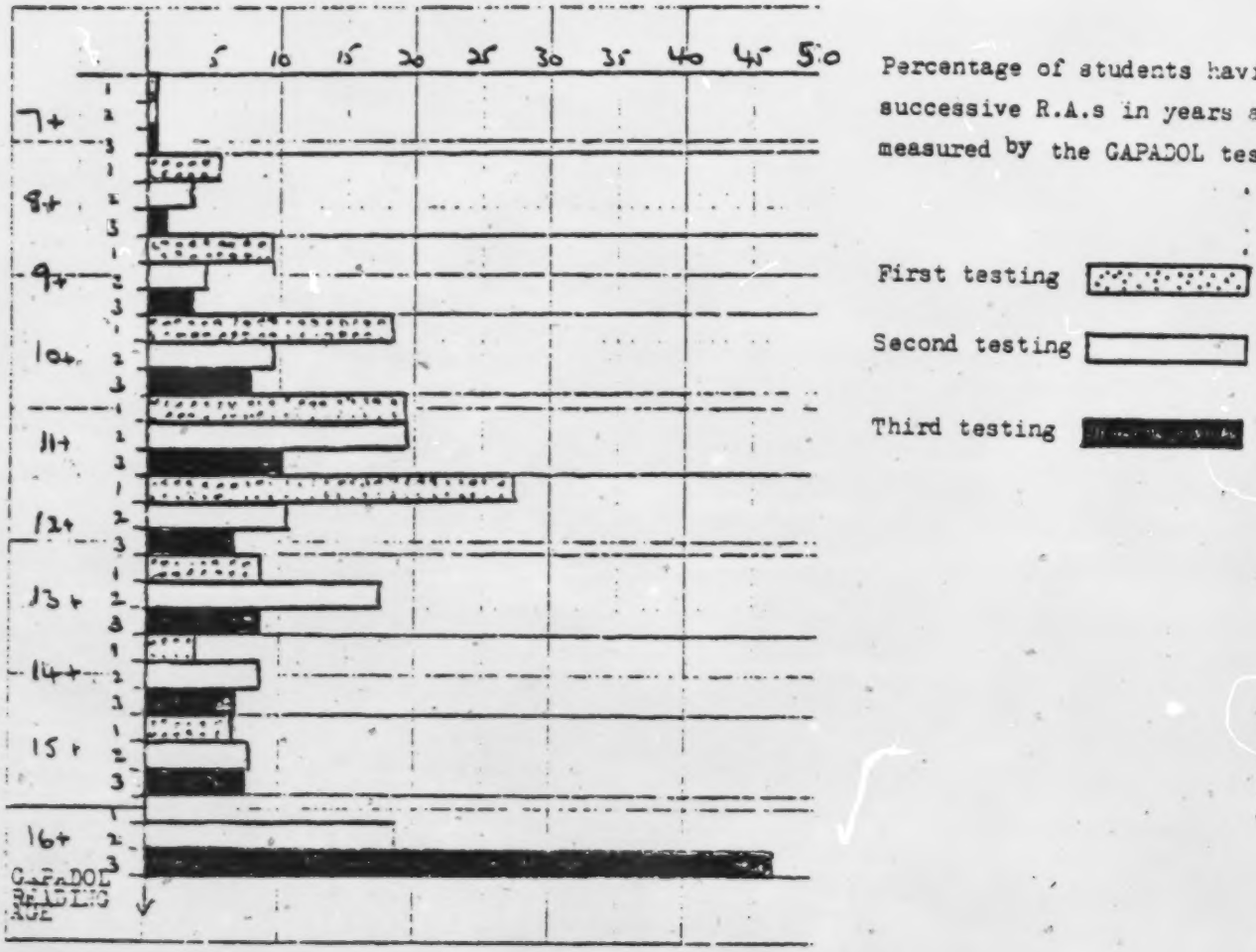
This inquiry cannot therefore be regarded as a controlled experiment. Nevertheless, it does enable us to report on the effects of a prolonged experience in which the content of any text that was studied was always appropriate to the topic under review.

The principal measure used in the inquiry was the Gapadol reading comprehension test. This was selected because the clues that need to be considered when completing the gaps in the various passages contained in the text are suitably wide ranging. Careful inspection both of the passages and of the deletions suggests that together they cover the various aspects of comprehension the project seeks to promote. At the same time, the test is easy to administer and makes little demand on time.

Other measures that were available included the Schonnel Word Reading Test and the Bristol Study Skills Test.

The Gapadol Reading Comprehension Test was administered on three occasions: (1) within one month of school entry; (2) at the start of the third term; and (3) at the start of the eighth term.*

Figure 1. Improvement in reading age following a programme of text-based lessons



* The school year consists of three terms of approximately 13 weeks.

The relevant information is summarised in Table 6. This shows that the percentage of pupils whose reading age is two years or more in arrears of their chronological age remains practically constant throughout the period of the inquiry. By contrast, pupils who show an RA more than two years in advance of CA increase from 13% to 54% of the population. The trend is the more remarkable in that it is generally easier to produce gains among low achievers using some standard remedial programme. Our aim was different, and appears to have been substantially realised, since we were most concerned with the broad spectrum of the population who are not backward in any accepted sense.

Concluding comment

The four enquiries summarised here indicate that, given the right teachers and the right teaching, directed activities related to text can operate successfully in the manner that was intended. Pupils are more active in discussion, the t acher is freed to deal with individual problems - having designed the plan of the lesson as a whole, and there is a marked increase in pupil initiative. Following a period of regular lessons based on these principles, the bulk of the pupil population show a marked improvement in reading comprehension as measured by a good standard test. The weakest pupils, however, clearly require individual remedial attention over and above the text-based lesson.

It should be stressed that whatever favourable results are reported in this article are contingent on the collaboration, the understanding and the effectiveness of the teachers concerned. A closer study of the conditions that are necessary for successful implementation of the principles of text-based learning must therefore be an important part of the fuller evaluation which is now in process.

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